

## INFLUENCE OF BARRIERS TO ENVIRONMENTAL SUSTAINABILITY ON ENVIRONMENTAL MANAGEMENT ACCOUNTING IN THE FOOD AND BEVERAGE MANUFACTURING FIRMS

Smangele NZAMA<sup>1</sup>, Odunayo Magret OLAREWAJU<sup>2</sup>, Omolola A ARISE<sup>3</sup>

<sup>1,3</sup>Department of Management Accounting, Faculty of Accounting and Informatics, Durban University of Technology, South Africa

<sup>2</sup>Faculty of Accounting, Coventry University, Coventry, United Kingdom

Corresponding author: Smangele Nzama

E-mail: [smangelen1@dut.ac.za](mailto:smangelen1@dut.ac.za)

### Abstract:

Most companies use environmental sustainability extensively as they receive pressure to operate in an environmentally sustainable manner. Companies need help to implement environmental management accounting practices in their operations. Accordingly, research on environmental sustainability difficulties in the context of environmental management accounting in food and beverage manufacturing enterprises is limited. The paper investigates how environmental sustainability barriers influence environmental management accounting (EMA) implementation in the food and beverage manufacturing firms in Durban, South Africa. A quantitative research approach was applied, using convenience sampling because the data was collected during the strict regulations of the Covid-19 period. The Likert questionnaire (five-point scale) collected quantitative data and was analyzed using SPSS, performing Pearson's correlation research and regression analysis. The Pearson's correlation coefficient findings show a statistically significant association between environmental sustainability bottlenecks and environmental management accounting in food and beverage manufacturing enterprises at ( $r = .250$ ,  $p < 0.0005$ ). As barriers to sustainability decrease, implementing environmental management accounting practices will be easier for these firms. The regression analysis results show the independent variable, barriers to sustainability, as a major predictor of environmental management accounting,  $B = 0.442$ ,  $p < 0.05$ . The SA government should make EMA practices mandatory for companies that harm the environment.

**Keywords:** Environmental Management, Sustainability, Accountability, Institutional Barriers, Food and Beverage.

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## INTRODUCTION

Companies will be critical in the transition to a more sustainable future. As the consequences of unsustainable behaviors, such as environmental degradation or unfair labor practices, become more apparent, there is an increasing sentiment toward the necessity for sustainability (Long et al., 2018). The food and beverage industries have looked to international sourcing to stay current and sustainably feed a growing population (Mboga, 2017). South Africa is Africa's leading Food and Beverage industry market, with more than 50% of locally manufactured goods imported yearly (Report, 2018). Companies are under increasing pressure from various stakeholders to address their business practices' societal and ecological implications.



Furthermore, a movement in the ideas and choices of increasingly prosperous citizens, particularly in Western societies, emphasizes the significance of corporate sustainability and responsibility (Engida et al., 2018). The term sustainability has changed over time, evolving in tandem with the dynamics of human society. Humans are collectively accountable for the world, and every one of them should be part of the battle against abuse and neglect of the environment. This disclosure challenged people worldwide to distinguish between environmental duty and environmental irresponsibility (Opoku et al., 2019).

The ability to replenish natural resources, control pollution production, and end environmentally harmful practices is known as ecological sustainability. Similar expressions like "going green" and "corporate social responsibility" are also associated with businesses that contribute to protecting the environment via their deeds. Large firms only generate around 30% of global pollution; they are significantly more competent in attaining environmental sustainability. They possess greater resources, like money, expertise, and tech, to change and push their organization to become more ecologically responsible (Bakos et al., 2020). Although some companies are exposed to numerous resources, they face challenges in engaging in environmentally friendly practices. Stakeholders pressure businesses to be transparent and accountable about their efforts to increase ecological responsibility. As a result of these influences, numerous perspectives on the idea and practices of environmental accounting have emerged (Burritt et al., 2002). Authorities, customers, local communities, and international organizations have embraced sustainable development, which holds that economic progress may continue while the environment and natural resources are protected (Setthasakko, 2010).

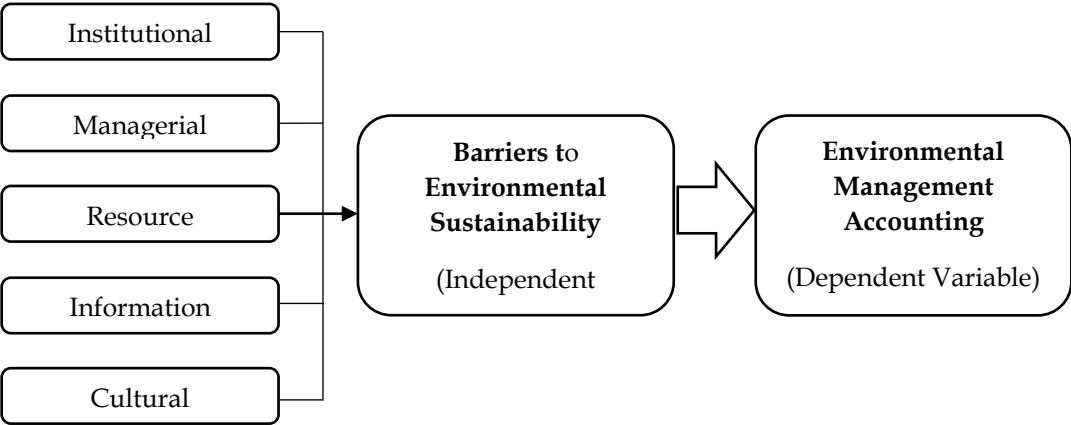
EMA is a strategy that combines financial accounting, cost accounting, and bulk balances to increase resource productivity, reduce ecological consequences and dangers, and lessen ecological control costs (Jasch, 2003). If industry associations, practitioners, and scholars are willing to question their present procedures to include sustainability in creating new techniques and standards, EMA may be the missing piece to sustainability. Indeed, despite numerous requests for corporations to promote openness and responsibility for their negative environmental consequences, reporting has long been regarded as insufficient to push organizations toward sustainability. Bringing the EMA closer to adopting sustainable development is a positive step toward reconciling organizations with sustainability (Gibassier & Alcouffe, 2018).

The concept of sustainability is not new to the corporate world, as reflected, for example, in the rising trend for companies to implement sustainability in their mission and vision statements, endorse efficient and environmentally friendly procedures, adopt triple-bottom-line disclosure requirements, and rejoice in sustainability (de Paiva Duarte, 2015). Previous studies have revealed that companies have inadequate knowledge about environmental sustainability. Sustainable practices are perceived as expensive According to Garzón-Jiménez and Zorio-Grima (2021) if enterprises in the food and beverage sector improve their sustainable conduct, they may benefit from lower capital costs, which are most likely generated from higher legitimacy among their various stakeholders and lower agency costs, which is an intriguing theoretical conclusion. Adams et al. (2022) highlighted that a firm must recognize the obstacles and drivers to sustainability adoption to make the necessary decisions while developing effective sustainability initiatives. The study further found that the absence of a government regulatory and environmental framework was viewed as a significant impediment. According to Iredele and Ogunleye (2017), institutional hurdles, administrative barriers, resource limits, informational barriers, and cultural differences are the five major impediments to environmental sustainability.

There is still a long way to go in living in a sustainable society, as there are still significant impediments to achieving sustainability goals (de Paiva Duarte, 2015). Little information is available

on the underlying reasons for environmental obstacles and the development of EMA. EMA procedures have improved in industrialized nations as a support mechanism for managing environmental difficulties. African enterprises facing many hurdles due to environmental deterioration have underutilized this instrument (Iredele & Ogunleye, 2017). This paper investigates the influence of environmental sustainability barriers on environmental management accounting within the food and beverage sector in Durban, South Africa.

**Conceptual framework to show the linkage between the variables.** Environmental awareness among corporations is increasing. As a result, many businesses are acquiring ecologically responsible options (goods and services that have a low environmental impact) and integrating them into their operational processes in the hopes of reaping benefits, such as cost savings, productivity improvements, and positive consumer impressions (Ramirez et al., 2014). On the other hand, some businesses take a more environmentally ambivalent position, recognizing that expenditures may be followed by the risk of low profits and long payback periods. To summarize, data suggest that adopting ecologically responsible solutions might represent a significant opportunity and that failing to do so may have a detrimental influence on a firm's reputation, cost structure, and earnings (Ramirez et al., 2014). As seen in Figure 1, corporate or commercial sustainability is linked to diverse challenges and issues. However, it is common for businesses to address a portion of the sustainability issue by focusing on specific areas and/or business activities. Simultaneously, different international and national requirements necessitate addressing specific sustainability challenges, while businesses may also choose a variety of extra sustainability factors for their sustainability activities (Stewart et al., 2016). Environmental sustainability challenges have arisen as critical topics of concern in corporate management. Growing consumer demand for environmentally friendly products and services tightened environmental legislation. A growing desire for greater corporate social responsibility has become the primary motivator for businesses to implement green initiatives (Evangelista et al., 2017). Despite a vast amount of research in this field, environmental sustainability is a continually increasing and evolving science with significant ambiguity in components of the issues and solutions (Khatter et al., 2021). Innovation can solve major environmental concerns but frequently encounters opposition, demanding a change in output to ensure acceptance. Specific barriers typically obstruct organizational change for sustainability; understanding them can aid in using appropriate techniques to overcome them, hence assisting in better incorporating and institutionalizing sustainability (Orji, 2019).



**Figure 1.** A conceptual framework of Environmental Sustainability and Environmental Management Accounting





Environmental sustainability barriers and drivers are variables that restrict or enhance an organization's contribution to the preservation of the environment. These elements can be internal, external, or organizational. Smaller organizations' efforts to address environmental sustainability challenges are hampered by a lack of awareness and comprehension of the idea and a lack of pressure from their clients and other effective drivers (Khatter et al., 2021). According to Álvarez Jaramillo et al. (2019), factors that affect the adoption of environmental sustainability in small firms include financial insecurity, unsatisfied and inefficient employees, poor public perceptions about the company, and environmental impact. Internal barriers are a major reason organizations do not incorporate environmentally sustainable practices into their daily operations. Costs and a lack of perceived legitimacy are primary internal barriers impeding ecologically friendly activities, while legislation and industry-specific barriers are external (Khatter et al., 2021). Establishing sustainability initiatives is hampered by poor market dynamics, an absence of efficient logistics, and insufficient environmental legislation. According to research, smaller businesses face greater issues and restrictions due to lacking resources such as finances and educated staff (Bakos et al., 2020).

Previous research has found a minimal correlation between environmental management accounting and sustainability. Several academics say EMA might be the missing piece in long-term sustainability. Therefore, embracing these notions may aid organizations in implementing sustainability in their practices (Gibassier & Alcouffe, 2018). According to Schaltegger (2018), because EMA focuses on natural environmental issues, it must be considered from the perspective of environmental issues of sustainability. In what the authors refer to as the critical perspective, the other viewpoint reflected in the EMA literature represents a broader environmental accountability and sustainability objective. According to this perspective, one fundamental criticism of the conservative EMA method is that irrespective of the rhetoric, the environment remains subordinate to the context of the business objective (Cullen & Whelan, 2006).

According to Jasch (2003), EMA is an integrated practice that enables information from financial reporting, cost accounting, and material flow balances to be transferred to boost material efficiency, minimize environmental effects and risk, and lower environmental protection costs. EMA is carried out by private or public organizations but not by states, and it includes both a financial and a physical component. A further study by Jasch (2006) highlighted a recent evolution of EMA to integrate social components and to shift the emphasis from "Environment" to "Sustainability." Sustainability requires businesses to discover strategies for better environmental performance while growing economically. Understanding the obstacles to sustainability and environmental management accounting is essential for conquering them. Integrating environmental considerations into typical accounting systems is a difficult task. The three underlying causes of the impediments are an absence of organizational learning and bad environmental experience and expertise (Setthasakko, 2010).

**Empirical Review.** In a study conducted by Ramirez et al. (2014), it was determined that supplier-related constraints, such as associated costs, simplicity of use, supplier reputation, and the inventiveness and implementation of their offers, and intra-organizational constraints, such as organizational structure and culture impede the implementation of environmentally friendly practices. According to the study findings by Orji (2019), the main impediments include an inefficient legislative framework, poor proactive strategies, a lack of sustainable waste management, and institutional buyers' preferences. Furthermore, the most influential factors were implementing government legislation, including sustainability into proactive strategies, marketing sustainable products, and improving infrastructure support and facilities for sustainability.



Stewart et al. (2016) conducted a study on the obstacle to many forms of sustainable initiatives that were explored. It was revealed that performance evaluation systems and access to industry-specific research, standards, or reference cases are shared spaces of concern for all types. When changing from a manufacturing to a customer value perspective, the key variation is increased obstacles beyond the firm's borders. According to Khatter et al. (2021), time, financial problems, availability of resources, and the perspectives and implications of hotel owners and shareholders were identified as essential impediments to adopting and maintaining environmental sustainability in the hotel business.

Opoku et al. (2019) found that the main challenge with adopting environmentally sustainable practices included perceived initial costs, a lack of awareness, technological challenges, external pressures to embrace techniques, and environmental circumstances in underdeveloped nations. A study by Álvarez Jaramillo et al. (2019) investigated barriers to sustainability in small companies. It revealed that common barriers were a scarcity of resources, the high initial investment cost of adopting sustainable measures, and a scarcity of knowledge.

A study by Iredale and Ogunleye (2017) highlighted that a financial barrier is the most significant impediment to adopting EMA standards in South Africa. The core and foundation of this obstacle is whether the cost of implementing EMA surpasses the benefits. According to Setthasakko (2010), the fundamental reasons for the barriers include a lack of administrative training, little concentration on economic strength, and a need for more direction in environmental management accounting. A study by Lee (2011) determined that certain manufacturing companies still need a planned approach to implementing environmental management accounting into their practices. Furthermore, these companies' accounting and information systems need to improve the adoption of environmental management accounting. According to Jamil et al. (2015), financial constraints impede EMA's development in small manufacturing companies. Thus, inadequate environmental awareness (regarding actual economic impacts) and skills impede the implementation of environmental problems into accounting systems and processes. The study also revealed that the need for an EMA guide impedes incorporating environmental problems into current accounting systems and processes.

This research is significant as it addresses the barriers that influence adopting sustainable practices in food and beverage manufacturing firms. The previous empirical literature has revealed that many stakeholders are pushing firms to perform business activities that do not adversely impact the environment.

The hypothesis of the study is:

H0: Barriers to environmental sustainability do not influence environmental management accounting practices in food and beverage manufacturing firms.

H1: Barriers to environmental sustainability do influence environmental management accounting practices in food and beverage manufacturing firms.

Based on the explanation above, this study investigates how the barriers to environmental sustainability influence the implementation of environmental management accounting (EMA) in the food and beverage manufacturing firms in Durban, South Africa.

## METHODS

The study uses a quantitative approach. The researcher utilized a survey data collection methodology to obtain primary data. It entailed distributing closed-ended structured questionnaires. The quantitative data was based on five closed-ended Likert scale questionnaires with ordinal data measured on a scale of 1 (strongly disagree) to 5 (strongly agree) (strongly agree). A non-probability sampling technique was used for this study, applying a convenience

sampling technique. The researcher intended to analyze roughly 55 enterprises that manufacture food and beverage in Durban (Nzama et al., 2022; Robbins & Velia, 2015). The study's sample size was 32 food and beverage production enterprises multiplied by the four chosen respondents (financial managers, management accountants, factory accountants, and chief accountants). It used a sample size of 128 respondents from Durban's food and beverage manufacturing enterprises. Survey questionnaires were delivered to the 128 respondents from the sampled food and beverage manufacturing enterprises: 4 respondents were sampled and selected from each of the 32 firms chosen. The researcher contacted the responders through email and explained the purpose of the study. The email address of each responder was gathered from their webpage, and each candidate discovered was encouraged to join through email. However, 124 questionnaires were collected, four (4) of which had incorrect answers when returned. Data from survey questions were gathered and analyzed using the Statistical Package for the Social Sciences (SPSS).

### RESULT AND DISCUSSION

**Respondent’s profile.** The demographic characteristics of a study sample were examined; see Table 1.

**Table 1.** Background Information

| Item                  | Description               | Frequency | Percent |
|-----------------------|---------------------------|-----------|---------|
| Job Designation       | Financial Managers        | 31        | 25%     |
|                       | Management Accountants    | 32        | 28.8%   |
|                       | Factory Accountants       | 31        | 25%     |
|                       | Chief Accountants         | 30        | 24.2%   |
| Level of Education    | Diploma/bachelor’s degree | 16        | 12.9%   |
|                       | Honor's degree/ Btech     | 54        | 43.5%   |
|                       | Master’s degree           | 29        | 23.4%   |
|                       | Doctoral Degree           | 25        | 20.2%   |
| Employment Experience | 0-5 years                 | 11        | 8.9%    |
|                       | 6-10 years                | 25        | 20.2%   |
|                       | 11-15 years               | 36        | 29%     |
|                       | 16-20 years               | 36        | 29%     |
|                       | >21 years                 | 16        | 12.9%   |
| Firm scale            | Small                     | 57        | 46%     |
|                       | Medium                    | 39        | 31.4%   |
|                       | Large                     | 28        | 22.6%   |

Source: Data Processed by Author 2023

Most respondents hold an honor's degree/Btech qualification, with more than 70% having work experience of more than ten years.

**Environmental sustainability hurdles impact environmental management accounting for food and beverage manufacturing** companies based on correlation and regression research. In order to show a connection between environmental sustainability and environmental management accounting in food and beverage manufacturing enterprises, Pearson's correlation coefficient was used. The findings of the statistical analysis are presented in Table 2.

**Table 2.** Correlation between barriers to environmental sustainability and environmental management accounting

| Construct A | Construct B   | Pearson’s Correlation (R) | P-Value |
|-------------|---------------|---------------------------|---------|
| Barriers to | Environmental | .250**                    | <.0005  |

|                              |                       |
|------------------------------|-----------------------|
| Environmental Sustainability | Management Accounting |
|------------------------------|-----------------------|

\*\*Correlation is significant at the 0.01 level (2-tailed)

Source: Data Processed by Author, 2023

The Pearson's correlation coefficient results in Table 4.2 show a statistically significant association between environmental sustainability constraints and environmental management accounting in food and beverage manufacturing enterprises at ( $r = .250, p < 0.0005$ ). The positive correlation suggests that constructs A and B have a direct relationship. In other words, as barriers to sustainability lessen, it will be simpler for food and beverage manufacturing enterprises to implement environmental management accounting practices.

A regression analysis was then performed to determine the degree of influence between the two constructs. Table 4.3 displays the outcome of the linear regression.

**Table 3.** Linear regression barriers to environmental sustainability and environmental management accounting

| Variables In The Equation | B     | Beta | T     | P-Value | R <sup>2</sup> | F     | Df     | P-Value |
|---------------------------|-------|------|-------|---------|----------------|-------|--------|---------|
| Constant                  | 6.404 |      | 4.303 | <.0005  |                |       |        |         |
| Barrier To Sustainability | .442  | .250 | 2.855 | <.05    | .063           | 8.149 | 1; 122 | <.05    |

DV – Environmental Management Accounting

Predictor (Constant) – Barriers to Sustainability

Source: Data Processed by Author, 2023

The regression analysis results, summarized in Table 4.3, show an R2 value of 0.063, indicating that environmental management accounting accounts for 6.3 % of the variance in environmental sustainability and that there is a significant positive linear relationship between constraints to environmental sustainability and environmental management accounting,  $F(1, 122) = 8.149, p < .05$ . Constraints to environmental sustainability, an independent variable, is a major predictor of environmental management accounting.,  $B = 0.442, p < 0.05$ .

Balasubramanian and Shukla (2020) argue that challenges to environmental sustainability include a lack of ecological experts and sustainable suppliers, a lack of sufficient funding, high adoption costs, and a lack of knowledge and awareness. According to Ghisetti et al. (2017), financial barriers and particular difficulties in gaining access to foreign funding sources pose substantial threats to the environmental capability of European Union manufacturing SMEs. The lack of secure and competitive markets and a credible institutional backdrop heightens the uncertainties and dangers associated with Environmental Innovation investments, emphasizing the stifling nature of external financing limitations. Between 2013 and 2017, Álvarez Jaramillo et al. (2019) examined the 50 most cited publications to assess the problems SMEs encounter when integrating sustainable development initiatives. The most typical roadblocks are a lack of cash, a high initial investment cost in implementing sustainable procedures, and a lack of knowledge.

Environmental management accounting (EMA) was created to identify and record enterprise environmental operations' financial and non-financial consequences. Environmental issues are integrated into regular accounting systems by EMA. According to Kapardis and Setthasakko (2010), companies must find strategies to improve environmental performance while expanding their operations. The study also discovered barriers to establishing EMA included a need for more organizational learning, limited environmental knowledge and skills, and management's incapacity to use environmental data. These barriers have an impact on both corporate





environmental performance and the road to environmental and social sustainability. According to Iredele and Ogunleye (2017), EMA barriers are classified as follows: organizational barriers, institutional barriers, attitudinal barriers, and financial constraints. The biggest impediment to implementing environmental management accounting in South Africa was a financial barrier (which comprises a lack of resources, non-consideration of environmental costs, and the efficiency of financial consideration). A further in-depth assessment of financial constraints indicated that EMA practices in South Africa are substantially impeded by the high costs associated with integrating EMA into business processes and accounting systems. A prior study by Muhammad Jamil et al. (2015) also found that financial constraints, restricted resources, financial competence, and lack of attention to environmental costs are all challenges to EMA procedures.

Environmental sustainability barriers and environmental management accounting barriers are comparable. It explains why the two variables have a positive association. When environmental sustainability constraints are addressed, the business can adopt environmental management accounting practices.

## CONCLUSION

This study aimed to investigate the impact of environmental sustainability constraints on environmental management accounting in food and beverage manufacturing enterprises. The study concentrated on businesses in Durban, South Africa. The overall goal was to assess whether resolving environmental sustainability constraints will have a favorable impact on the implementation of environmental management accounting practices in these industrial firms.

A significant and favorable association was identified between environmental management accounting and barriers to environmental sustainability. The research also revealed that these barriers significantly predict implementing environmental management accounting. The analysis confirmed the hypotheses stipulating that barriers to environmental sustainability detect the implementation of environmental management accounting practices in food and beverage manufacturing firms. Resolving environmental sustainability barriers will enhance the adoption of environmental management accounting in food and beverage manufacturing enterprises. The preponderance of these businesses does not practice sustainability in their operations, which means that there are no policies in place to resolve this issue, so these companies will continue to operate in an unsustainable manner.

Food and beverage firms should utilize environmental management accounting because it is crucial in giving information that lowers the negative environmental consequences caused by their activities. It is advised that the South African government make sustainable practices mandatory for these organizations since this will assist management in decision-making.

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